

AFIT/GLM/LAL/99S-7

WORKPLACE VIOLENCE:  
EXPLORING THE DANGERS FOR  
AIR FORCE LEADERSHIP

THESIS

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AFIT/GLM/LAL/99S-7

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**AFIT/GLM/LAL/99S-7**

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**THESIS**

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## **Abstract**

The repeated occurrences of workplace violence throughout society today require the Air Force to evaluate its own workplaces and determine if a threat exists. This research explored violence in the workplace and established the possibility that workplace violence can affect the Air Force. Additionally, Air Force Climate Assessment Surveys were evaluated to find information that could be useful in detecting early warning signs of potential workplace violence.

A number of examples of violence that occurred within Air Force workplaces highlighted the threat for Air Force leadership. With over 1,680 incidents of workplace violence reported to the AFOSI in a 5-year period, Air Force leadership needs a method to predict dangerous environments and a plan to reduce the dangers of incidents of violence.

Current research indicated that workplace climate surveys are an effective means of detecting warning signs of a potential perpetrator of workplace violence. The analysis of Air Force Climate Assessment Surveys determined that the Air Force could use their current survey to detect warning signs of an unstable work environment. By focusing on ten items of the standard Air Force survey, trends in favoritism, inequity, and poor supervision may be detected early enough to reduce the potential of violence.

**Workplace Violence:**  
**Exploring the Dangers for Air Force Leadership**

**I. Introduction**

**Background**

Violence is creeping into every aspect of American society. We have always felt reasonably safe sending our children to school, driving on highways, or laboring at our workplaces. Clearly, our environment has changed. Media reports of guns in schools, freeway shootings, and disgruntled employees “going postal” are more common today than ever before (Bulatao and VandenBos, 1998: 1). Violence in the military workplace does not receive the media attention that other incidents do, except in the most extreme circumstances. However, our military has always represented a cross-section of America. Unfortunately, this representation of American society now presents a threat to the welfare of military leadership. In fact, research indicates that “the greatest threat (in total numbers of incidents) of interpersonal violence comes from our military members and not from outside threats” (Ruby, 1998: 9).

The threat of violence in our workplaces is a relatively new danger that Air Force leadership has never been trained to handle. Prior to 1992, almost no research had been

performed on workplace violence. A great deal has been written in the past five years pertaining to these increasing incidents of violence in workplaces.

In order to provide meaningful comparisons among studies, the following definitions will be used:

- **Workplace Aggression:** encompasses all purposeful, negative acts within the workplace. This category includes a wide variety of items: spreading rumors, withholding information, waste of materials or company time, ignoring people, and all other items covered in workplace crime or workplace violence.
- **Workplace Crime:** includes all purposeful, illegal events, usually pertaining to property. This category includes: theft, vandalism, sabotage, etc.
- **Workplace Violence:** covers all attacks or attempted attacks involving people. This category includes: homicide, rape, assault, etc.
- **Workplace:** for military members, this is hard to define. For the purposes of this study, the workplace is any area in which a military member, reservist, or civilian government employee is performing their primary duty. Therefore, base housing would not be the workplace for an aircraft maintenance airman, but could be the workplace of a civil engineering airman.

### **Problem Statement**

My hypothesis is that the military workplace also experiences incidents of workplace aggression and violence. To date, there has been no published research investigating violence within military workcenters. Therefore, it is impossible to determine if the frequency of violent incidents among military members in the workplace is increasing. However, if my hypothesis is supported by research, military leadership must prepare its officer and senior enlisted force with better training to deal with hostile people and situations in the workplace. By recognizing potentially violent personnel and problems in the workplace early enough, Air Force supervisors will have the opportunity to diffuse critical situations before violent acts occur.

The specific purpose of this thesis is to determine if military workplaces are at risk for violence. I achieved this goal by providing a detailed review of current literature on workplace aggression and violence, analyzing squadron self-assessment questionnaires for early warning signs of potential workplace aggression, and providing recommendations for further research ultimately leading toward the development of an Air Force Workplace Violence Prevention Program.

### **Research Scope**

I analyzed a specific Air Force workcenter to determine if there were warning signs suggesting the potential for workplace aggression. The end result supported my belief that workplace violence could occur within the military. I included factors identified in the U.S. Postal Service's workplace violence prevention plan as well as those recently published in the U.S. Office of Personnel Management's guide, Dealing with Workplace Violence: a Guide for Agency Planners (USPS Pub 108, 1997: 31 - 36; USOPM, 1998: 18 - 23).

### **Research Approach**

First, an extensive literature review details the history of workplace violence and provides insight into the use of climate assessment surveys as the first step toward detecting potentially violent situations. Air Force Climate Assessment Surveys from a 520-person squadron performing numerous aspects of aircraft maintenance were gathered for analysis. Due to the sensitivity of the topic and the data supplied, the responding squadron will remain anonymous. A statistical analysis of the results from the most

recent unit self-assessment survey will determine if the warning signs of potential workplace aggression exist. While these studies cannot provide a complete analysis of the workcenter, the climate assessment questionnaire is accepted as the first step toward detection of potential workplace violence (Kinney, 1995: 47). Following my evaluation of these results, I will incorporate any findings into my recommendation to the Air Force to implement a workplace violence prevention training program for all personnel. If no warning signs are discovered, I will review my method and make recommendations for further study in the area.

In order to be successful, this thesis must answer the following questions:

1. What is workplace violence and is the Air Force affected by it?
2. Is there information that the Air Force already gathers that could be analyzed to determine what areas may be at risk for incidents of workplace aggression?

Additionally, some key assumptions will be necessary in order to arrive at meaningful conclusions. These assumptions are as follows:

1. The self-reported survey responses provided by members of the responding squadron are representative of Air Force aircraft maintainers as a whole.
2. All members of the responding squadron had equal opportunity to respond freely to the survey and felt that there would be no reprisal for their answers.

## **Results**

This method and my analysis of the squadron self-assessment survey should indicate the first step that any unit can take to detect early signs of potential aggression in their workcenter. If the research supports my hypothesis, this study will provide future researchers with a benchmark with which to compare other squadrons. The very minimum product of my research should be to increase awareness among a small group of leaders (my classmates) and to provide preliminary research for the AFOSI to build upon as they are just beginning to explore the dangers of workplace violence.

## **Summary and Overview**

This chapter provided a brief overview of the need for this research and violence. Additionally, it has addressed the specific problem that this thesis will address, indicated the research scope, and proposed the questions that will be answered as a result of this effort. Chapter II will be a review of current literature to provide a detailed background into the issue and develop support for the research. Chapter III will include the methodology used to analyze the data discussed in Chapter IV. Finally, Chapter V will be the conclusion and summary.

## **II. Literature Review**

### **Introduction**

Workplace violence has been identified as the fastest growing problem in the United States (USPS Pub 107, 1997: 1). Recent estimates indicate that workplace violence incidents cost employers \$4.2 billion every year with an additional \$22 billion spent annually for security equipment (Coco, 1997: 16, Harvey and Cosier, 1995: 16). In spite of this alarming trend, almost no information was published about workplace violence until 1994. While two government agencies led the way in developing violence prevention programs and publicizing both preventive and contingency plans, most federal workcenters failed to acknowledge workplace violence as a problem until 1998 (USOPM, 1998: I).

This literature review answers the first research question stated in Chapter 1, What is workplace violence and is the Air Force affected by it? The answer to this problem is discussed in the first four sections of this chapter. The first section describes the history of workplace violence and statistical trends. Included in the second through fourth sections are demographics about perpetrators of workplace violence and profiles of typical military members, details about usual chain of events leading to violence, and recent incidents of violence within the Department of Defense. A fifth section explores the use of climate assessment questionnaires as a tool to gain a better understanding of the work environment. Additionally, the literature reveals how this initial understanding of the workforce is vital to developing a successful workplace violence prevention training program.

## **History of Workplace Violence**

The words “workplace violence” evoke images in many minds of disgruntled postal workers returning with semi-automatic rifles to the office that fired them and randomly killing past co-workers. If the situation were this simple, workplace violence would be an easy problem to mend. However, the problem is far more complex. In reality, an average of 20 people are killed at their workplaces every week in the United States. Perhaps more significant are more than 2,115 estimated incidents of workplace aggression occurring weekly (Kinney, 1995: 5,13). A number of factors must be examined to gain an understanding of what workplace violence is and what can be done to reduce the number of incidents.

An overview of the agencies that track incidents of workplace violence and develop policies designed to minimize their occurrence is essential to understanding the statistics that follow in this section. In the Air Force, the Air Force Office of Special Investigations (AFOSI) is tasked with investigating violent crimes and developing preventive measures to avoid dangerous situations. The civilian workplace has numerous organizations that can be involved with a violent crime, but the overarching authority for ensuring the “safety and health at work for all people through research and prevention” is the National Institute for Occupational Safety and Health (NIOSH) (NIOSH, 1996:1). As each of these organizations meets different needs, each has a slightly different definition of the term “violence.” The AFOSI defines workplace violence as: “(a) a *act*, (b) at an Air Force *work site*, (c) committed by *any person*, (d) for *any motivating reason*, (e) intended to cause *physical harm*, and (f) directed at *any other person*” (Ruby, 1998: 15). NIOSH provides a slightly more generalized definition to the civilian force: “violent

acts, including physical assaults and threats of assault, directed toward persons at work or on duty" (NIOSH, 1996:1).

NIOSH began tracking homicide as a cause of death in the workplace in 1980. From 1980 to 1992, NIOSH recorded 9,937 homicides in the workplace. Total workplace homicides ranged between 649 and 944 per year, maintaining a fairly constant rate as illustrated in Figure 1 and summarized in Table 1 (NIOSH 1996:1). However, all other causes of death in the workplace declined, leaving homicide as the second most frequent overall cause of death on the job and the leading cause for women (Harvey and Cosier, 1995:11).

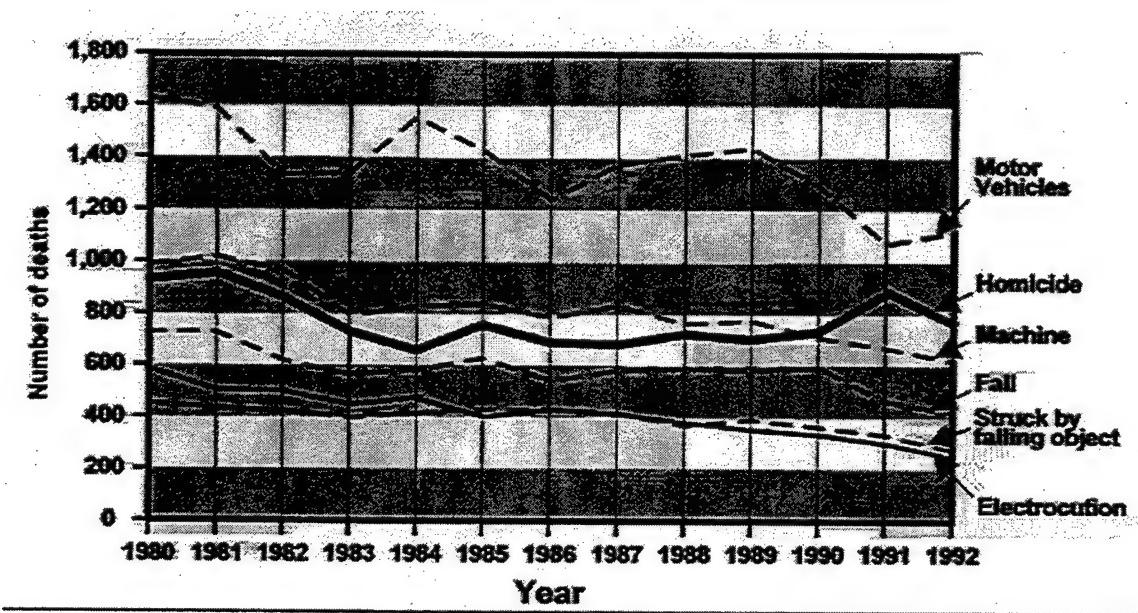


Figure 1. Leading causes of workplace deaths per year, 1980 – 1992 (NIOSH, 1996: 2)

Table 1. Workplace homicides in the United States, 1980 – 1992 (NIOSH, 1996: 2)

Year	Number	Rate*
1980	929	.96
1981	944	.94
1982	859	.86
1983	721	.72
1984	660	.63
1985	751	.70
1986	672	.61
1987	649	.58
1988	699	.61
1989	696	.59
1990	725	.61
1991	875	.75
1992	757	.64
Total	9,937	.70

\*Per 100,000 workers.

Two key factors contributing to these statistics do not exist in the Air Force workplace. The first is that 75% of the deaths were associated with robbery or other crimes. The second, which follows from the first, is that certain careers had significantly higher rates of homicide on the job than the average. Taxi drivers had the highest homicide rate, 26.9 per 100,000 employees, with liquor store and gas station attendants second with a rate of 12.6 per 100,000, and police and security third with a rate of 8.4 per 100,000 (NIOSH, 1996: 1). The high rate among these employees is not extremely surprising. The above jobs involve seclusion, exposure to high-crime areas and times of night, and known risk. Of great concern, however, is that the remaining 25% of the deaths, or nearly 2,500 employees, occurred in workplaces that are not generally thought of as "high risk." The circumstances of these incidents follow in Table 2.

Table 2. Circumstances of workplace homicides – United States 1992 – 1994  
 (NIOSH, 1996: 3)

Circumstance	Homicides (% of total)*		
	1992 N = 1,004	1993 N = 1,063	1994 N = 1,071
Robbery and other crime	82	75	73
Business dispute / work associate	9	10	9
Coworker / former coworker	4	6	5
Customer / client	5	4	4
Police in line of duty	6	6	7
Security guard in line of duty	#	5	7
Personal dispute / acquaintance	4	4	4

\* Percentages add to more than 100% because of rounding

# This category was not included in 1992.

While the above statistics provide information about workplace homicide, they do not explain the additional problems associated with less severe violence in the workplace. NIOSH found that in 1992, 20,098 violent acts were committed in the workplace that resulted in the victim missing days of work. The median days off work ranged from 3 days for biting victims to 30 days for shooting victims. The cumulative result of this was nearly 124,000 days missed by victims of violence in 1992 alone (NIOSH 1996:1).

Additional impacts on the victims appear in Table 3.

AFOSI did not track the location of violent crimes for the Air Force until 1993. From 1993 through 1997, AFOSI responded to 6,223 complaints of violent crimes. Approximately 27% of these, or 1,680, occurred in the workplace. AFOSI noted that enlisted personnel committed 93% of these acts, with Air Force civilians accounting for 4% and officers committing the remaining 3%. AFOSI notes that the rate of homicide is

Table 3. Impact of workplace violence on health and productivity of victims  
 (Kinney, 1995: 14)

Effect on worker	Attack	Threat	Harassment
Affected psychologically	79%	77%	88%
Disrupted work life	40%	36%	62%
Physically injured or sick	28%	13%	23%
No negative effect	15%	19%	7%

"relatively low," although no figure was given. Furthermore, they compare an aggravated assault rate in the Air Force of .982 per 5,000 employees with a civilian rate of 52.25 per 5,000 employees (Katzaman, 1998:1). While this figure may be accurate for the general population of the civilian world, the average rate of homicide in the workplace for civilians is .035 per 5,000 workers (NIOSH 1996:1). Since the emphasis in any study varies from agency to agency, it becomes extremely difficult to compare data and see if the same problems exist in the Air Force as in the civilian workplace.

Figure 2 illustrates the rates of aggression among Air Force members from 1993 to 1997.

While these rates appear to be extremely low, Ruby cautions that the less severe incident rates may be misleading. He cites three reasons why analysis of the AFOSI database probably underestimates the occurrences of such acts within the Air Force. First, many people have grown accustomed to experiencing simple assaults and threats as part of their normal day. The victims may disregard threats or mild violence as attempts at intimidation or fits of anger rather than a crime. Second, sexual assaults and mild violence may go unreported because of their potential for embarrassment and re-traumatization of the victim. For non-sexual assaults, it is not uncommon for military

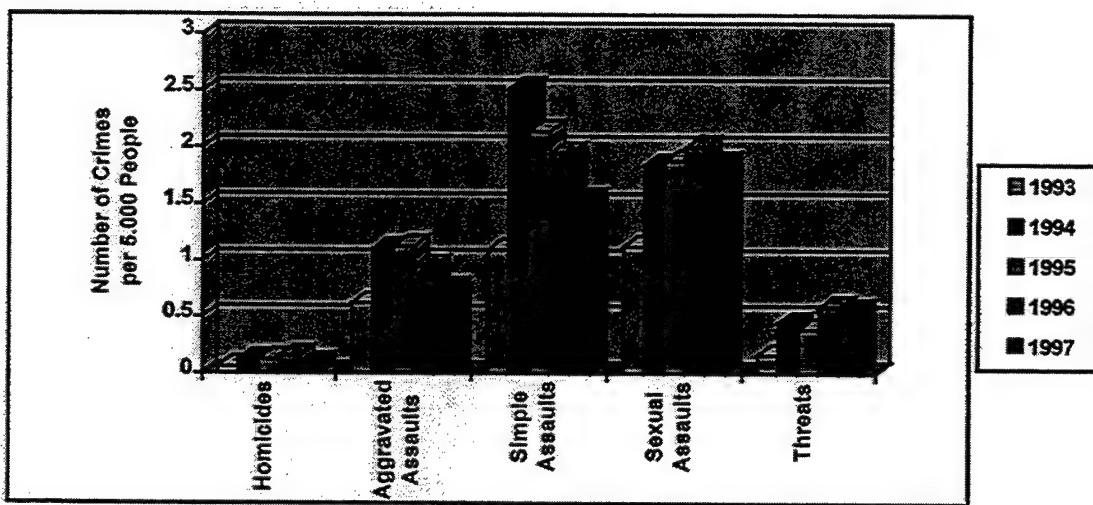


Figure 2. Incident rates of aggression committed by Air Force members (Ruby, 1995: 4)

members to ignore acts of aggression as "tests of toughness" that they must pass to remain in good standing with their colleagues. Third, AFOSI investigates significant crimes, usually limited to felonies. Therefore, AFOSI may never be notified of many simple assaults. Ruby summarizes his findings by stating that the "proportion of simple assaults, sexual assaults, and threats are probably higher in reality than reflected in"

Figure 2 (Ruby, 1998: 4).

While the overall violent incident rate for the Air Force does appear to be significantly smaller than the civilian rate, incidents of workplace violence in the Air Force do pose a considerable threat. Analysts have only recently begun examining workplace violence statistics. In only a 4-month period between January and April 1996, there were 14 incidents of workplace violence in the Air Force. An additional 26 threats made at or to an Air Force workplace occurred during this same period. Review of the 14 workplace violence incidents revealed that none of them resulted in deaths. Eleven

were either simple or sexual assaults in which no weapon was used. The other three cases did involve weapons. In two cases, guns were used while the third case involved the perpetrator striking his victim with a car. A significant difference from the civilian statistics is that nine of the cases occurred between people who had some type of personal or professional relationship prior to the assault (Ruby, 1998: 15). In other words, nearly 65% of the cases of Air Force workplace violence occurred between co-workers compared to only 44% in civilian workplaces (Stone, 1995: 3).

Analysis of the above historical statistics indicates that similarities and differences exist between civilian and military workplace violence incidents. While the occurrence of aggression appears to be higher in civilian workcenters, the rate of co-worker violence is significantly higher in military workplaces. To gain a better understanding of the magnitude of the problem in the Air Force, further exploration of the typical perpetrator, typical Airman, and cases of workplace violence are necessary.

### **Perpetrator Profiles and Air Force Demographics**

Both military and civilian experts have worked to summarize the personality and individual qualities that constitute a workplace aggressor. The resulting profiles can provide researchers and managers alike with some increased awareness of certain people. However, there are certain dangers that follow from using profiles to predict perpetrators of violence. These profiles do not predict when or where the incident will occur and often does not correspond to the actual perpetrator (Albrecht, 1997: 144). Additionally, certain individuals could be unfairly scrutinized because they share a number of

characteristics with the profile. In spite of these disadvantages, profiles are extremely useful in promoting awareness and providing a starting point for research to prevent further incidents (Stone, 1995: 6). Each researcher provides slightly different characteristics that are common among perpetrators of workplace violence. The following paragraphs discuss a number of the characteristics that are widely agreed upon within the military and civilian sectors.

The most widely supported characteristic is the individual's perception of some form of injustice at work. The source of this injustice can be widely varied. Perhaps the individual felt that his or her last performance appraisal did not reflect his or her true effort and production during the measurement period. Often, favoritism is cited as a source of unfair treatment. Additional sources of frustration within the workplace could be layoffs, denial of a request, other workers not completing their share of the work, and others receiving awards or promotions who are not believed to be the most deserving people. As the potential perpetrator becomes more frustrated with the unfair situation, the level of aggression displayed usually increases. As the intensity of the frustration increases, the individual will have more and more difficulty dealing with it, and the chances of violence increase. According to the Referent Cognitions Theory, unfair treatment leads to violence more than any other source due to the victim's ability to identify a specific person at fault for the mistreatment. Rather than being frustrated with an entire employer or situation, one person is seen as the problem. The victim can eventually feel that aggression toward this person is the only way to solve their problem (Folger and Baron, 1996: 54 – 61; Albrecht, 1997: 146; Ruby, 1998: 17; Stone, 1995: 6; USPS Pub 108, 1997: 31).

The next most prevalent trait is existence of marital problems. Increased stress levels at home can be carried over into the workcenter. The potential perpetrator of violence may overreact to a situation at work or perform poorly because of his or her unstable family life. This problem can be aggravated by a stressful or time-demanding job. Additionally, the person who does not have a stable family may not have a support system to help him or her cope with normal stress in the workplace. The culmination of these events can lead to increasing levels of aggression toward the workplace or the home. Military members are particularly at risk for this trait (Albrecht, 1997: 146; Ruby, 1998: 17; USPS Pub 108, 1997: 31). As seen in Figure 3, the divorce rate for military members is more than fourteen times the rate of the civilian population.

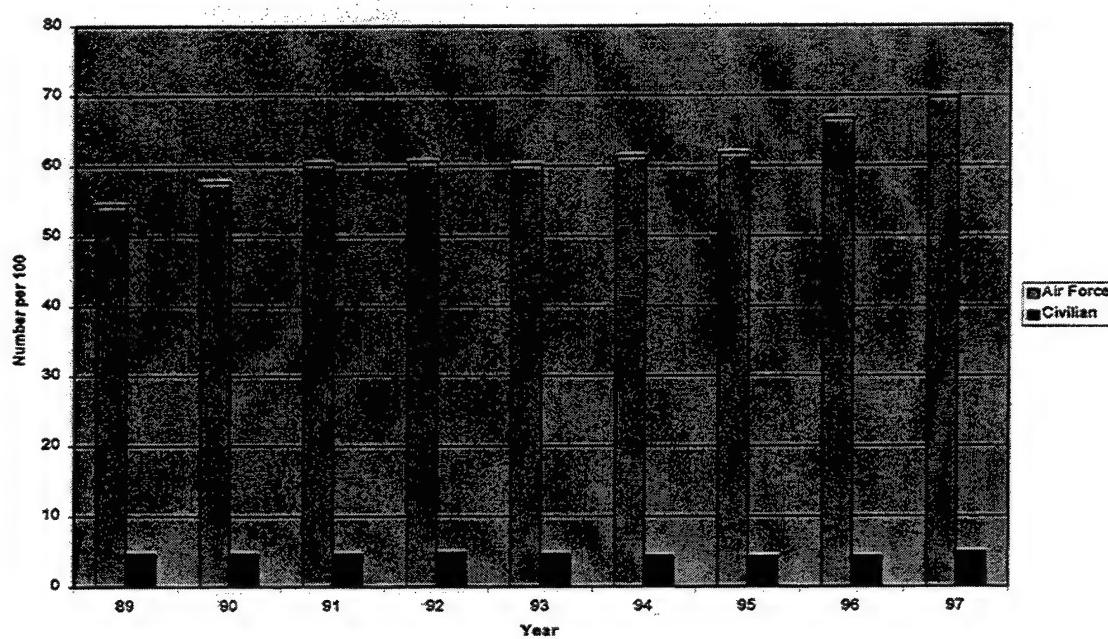


Figure 3. Divorce rates per 1,000 people (AFPC, 1999, Grolier, 1999)

A number of factors can be grouped into the broad category of personality characteristics. Some of the characteristics in this category include poor self-esteem, obsession with violence, poor interpersonal skills, drug or alcohol abuse, and psychiatric problems. All of these factors contribute to weakening the individual's ability to cope with normal pressures within the workplace. The Air Force does not maintain publicly available statistics for any of these items. However, there is no evidence in the literature that any of these factors would be significantly higher in the Air Force than the civilian workforce (Albrecht, 1997: 146; Ruby, 1998: 17; Stone, 1995: 6; USPS Pub 108, 1997: 31).

Additional factors directly correlate with military member's demographics. The typical perpetrator of workplace violence is a male, has served in the military, has access to weapons, and works under an authoritarian management structure. While not all of these factors apply to all Air Force members, a number of the traits do fit the typical Airman (Albrecht, 1997: 146; Ruby, 1998: 17; Stone, 1995: 6; USPS Pub 108, 1997: 31; Coco, 1998: 16). The strict structure that most of the Air Force operates under can be a trigger of violence in itself. Allcorn reveals that "a rigid hierarchical organization structure blocks the easy flow of thoughts and feelings. Employees may be obliged to communicate... through their supervisor, who may in their minds be part of the problem" (Allcorn, 1994: 93)

### **Sequence of Events Leading to a Violent Act**

While this profile can assist researchers and managers in promoting awareness in the workplace and detecting trends, there are other patterns that emerge that precede most

incidents of workplace violence. Typically, the perpetrator is suffering from one or more of the above problems (i.e., family problems, high stress at work, a perceived injustice at work). A trigger occurs that interferes with the attainment of a goal, and thus, causes frustration and stress. This trigger could be a variety of events. A single-event trigger could be a layoff, failing to receive an award or promotion, a reprimand, or a number of other situations. A cumulative minor event trigger would involve a long-running series of injustices occurring in the workplace that eventually result in the perpetrator “blowing up” and committing a violent act. Examples of this type of trigger are being overworked, repeatedly receiving lower performance appraisals than perceived performance indicates, or other longstanding sources of frustration (Kinney, 1995: 24; Ruby, 1998: 17).

The second event is the perpetrator’s ability to cope with the situation. A person who eventually resorts to violence generally perceives the situation as unsolvable. He or she believes that the only way to deal with the injustice is violence. The perpetrator projects all of the responsibility for the injustice onto one person or a small group. As stated above, the Referent Cognitions Theory predicts that this step permits the individual to focus all of his or her anger onto someone that can be dealt with. Unfortunately, the method of dealing with the person or group is often violence (Folger and Baron, 1996: 54 – 61; Kinney, 1995: 24; Ruby, 1998: 17).

The final event in the sequence prior to the act is the individual’s rationalization of the incident. The perpetrator can feel like he or she must carry out the act of aggression as a last resort of self-preservation. Once the individual believes that the injustice has reached the point that it is destroying his or her life, the consequent desperation results in violence. Another way of considering the rationalization is that the

perpetrator determines what the consequences of his actions are. By acting violently, an individual may believe that he or she will gain respect, money, or a sense of self-esteem. Conversely, the perpetrator may believe that violence will exonerate personal blame, physical pain, or apprehension and incarceration (Kinney, 1995: 24; Ruby, 1998: 18).

The information that appears in Table 4 was gathered by Dr. Ruby as a quick guide for use by supervisors and commanders in helping to assess a person's potential for violence. If the supervisor is aware that the person has experienced some triggering event, has difficulty coping with normal stresses, and has little reason to be concerned with or expect unfavorable consequences, the risk of acting violently increases. While there is no absolute scale that measures a person's attributes and matches them to this scale, a general interpretation is that as more and more factors are present, the individual is at increasing risk of reacting violently (Ruby, 1998: 18).

### **Incidents of Violence in the Air Force Workplace**

The military may be at higher risk today than ever before for incidents of workplace violence. As the military continues to downsize, we leave more base gates unguarded while the personnel who remain in the workforce are asked to produce more and more. In spite of the long hours that Airmen work and the amount of dedication they show to their job, some are being forcibly retrained into a new career field. For others, the demands of the job contribute to existing stresses in the family and result in the significantly higher divorce rate among military members than among civilians. Increased overseas deployments add further stress to family life. These factors combined

Table 4: Steps leading up to workplace violence

**TRIGGERS**

- Has been ridiculed
- Recent admonishment
- Marital problems
- Problems with children
- Personal failure
- Denied promotion
- Overworked
- Feeling unappreciated
- Feeling useless at work
- Feeling unjustly punished
- Legal problems
- Failed romance
- Any other frustrating event

**COPING STYLE**

*Inappropriate:*

- Deny problem
- “Bottles it up”
- Impulsive reaction
- “Black/white thinking”
- Blaming others
- Withdraws from people
- Narrowed focus
- Increased drinking
- Over-eating
- Excessive sleeping
- Overreaction

*Appropriate:*

- Admits problem
- Expresses emotions reasonably
- “Steps back” to think
- Considers alternatives
- Taking responsibility for problem
- Relies on others
- Sees better future
- Avoiding alcohol
- No change in diet
- No change in sleeping patterns
- Realizes problem is limited

**EXPECTED CONSEQUENCES**

*Inappropriate:*

- Ignore violence
- Violence encouraged by peers
- Admiration by peers/family

*Appropriate:*

- Immediate response by friends
- Immediate response by supervisor
- Reprimands
- Judicial/non-judicial punishment
- Violence discouraged by peers
- Disapproval by peers/family

(Ruby, 1998: 19)

with the degree to which the military member already fits the above profile of a perpetrator of workplace violence create an environment that is prone to violence.

Recent examples of violence in the Air Force workplace make this point clear.

The first occurred at McGuire AFB, NJ, in 1993. An Air Force major was shot and killed by a retired U.S. Army individual. The assailant entered the base legal office attempting to locate computers that could download the thoughts that he believed the government inserted into his brain. Follow-up investigation revealed that the individual called the base several times looking for someone who could assist him in removing the implants from his brain. In this case, the victim was a stranger to the perpetrator and there was no way of preventing the incident. However, had other base personnel taken the perpetrator's calls more seriously, he may have been able to receive psychiatric help before resorting to violence (Ruby, 1998: 16).

Another tragic incident occurred at Fairchild AFB, WA, in 1994. After months of interpersonal problems and mental evaluations, an airman was being discharged from the Air Force. He was released from the hospital to begin his discharge processing. Shortly thereafter, he purchased an assault rifle and returned to the hospital. He walked through the hospital and through security doors to the mental health ward. Once inside, he opened fire, killing two mental health providers and three civilians before the police shot and killed him. Further investigation of the incident revealed that he had told friends earlier in the week that he was going to go out "with a bang." In this case, the airman's supervisors, mental health providers, and friends were all aware of problems in the individual's life. A number of the trigger items affected the airman. He had been ridiculed, admonished, felt that he failed his family, faced personal failure, and felt that

he was unjustly being singled out for his problems. The supervisors succeeded in directing the airman toward mental health care, but the discharge system provided the perpetrator with the opportunity to complete the incident (Ruby, 1998: 16).

One additional incident occurred that illustrates the difficulty in separating workplace violence from any other form of violence, especially in the military. In 1997, an Air Force Master Sergeant shot and killed his entire family and then committed suicide. While he was having significant marital problems, the final trigger appeared to be when he was denied promotion. His failure to make Senior Master Sergeant meant that he would be forced to retire. In one event, he lost his job, a promotion that he felt he deserved, and felt certain that this would be the end to his marriage. Subsequent investigation into the incident revealed that he frequently expressed concern to his coworkers about the declining morals and work ethic of younger airmen. Additionally, three of the five statistical risk factors were present in that case. The offender had a long history of physical and verbal violence, he had threatened to kill his wife, and he had four firearms in the house. The perpetrator recognized the severe consequences of acting violently at work, but had not been punished for his aggression toward his wife (Ruby, 1998: 16).

While these three incidents show the extreme possibilities of workplace violence, they cannot represent the number of acts of less severe workplace aggression that occur in Air Force workplaces daily. The literature indicates that workplace violence is a severe problem for the Air Force and requires the attention of senior leadership. The AFOSI has taken the first step by publishing their pamphlet "Special Report: Interpersonal Violence in the Air Force." This report is designed to provide commanders

with a brief overview of dangerous situations, warning signs, and crisis procedures to reduce the incidents of violence (Ruby, 1998: 1). The next step that can be taken by commanders is to analyze their Climate Assessment Survey results for warning signs as explained above.

### **Evaluating Climate Assessment Surveys as a Prevention Technique**

The Air Force conducts Climate Assessment Surveys every two years to determine the status of equal opportunity programs in the workforce. In 1994, Air Force leadership recognized the Social Actions office at Pope AFB, NC for designing the most reliable and valid instrument for measuring the status of the programs. This survey subsequently became the standard for the Air Force. The survey polls workers on 42 items concerning their workplaces, the equal opportunity environment, and supervisor quality (Washington, 1999).

Analysis of the literature on violence reveals that the most effective method of preventing workplace is proper training of all employees. The first step is to increase awareness of all personnel in the workplace. The second is to educate the organization's leadership about the typical motivation and general profile of a perpetrator of workplace aggression. In addition to the use of perpetrator profiles and trigger charts, a workplace analysis is conducted. This analysis of the workplace is intended to detect general attitudes of employees, evaluate feelings of injustice in the workplace, and develop a general feeling for the contentment of the workforce. While this method may not detect a "rogue" disgruntled employee, the survey will record overall impressions of the workforce. If workers generally feel that supervision does not consider their needs or

reward deserving individuals, a more hostile workforce is likely to exist. Although the dissatisfaction of workers does not guarantee violent incidents, it is one additional stressor that managers may be able to eliminate (Ruby, 1998: 18; Harvey and Cosier, 1995: 16; Kinney, 1995: 47).

Walton suggests that by evaluating the way that workers perceive that managers act toward employees, sources of stress in the workplace can be detected and eliminated. He also suggests that by determining the current attitude of employees, management can select the correct approach to the problem (Walton, 1993:84). Similarly, Kinney reports that these survey results should be the focal point of work groups. By assembling small teams of workers to resolve issues detected by the workplace survey, the employees feel that management is responsive to their needs. Additionally, the workers gain pride in the program that they helped develop (Kinney, 1995: 47).

While the Air Force Climate Assessment Survey was never designed to be used for violence prevention, it does contain all of the factors suggested in the literature. The survey records perceived injustice whether due to discrimination, favoritism, poor supervision, inequity of workload, or excessive workload. In addition, the survey provides general attitudes of employees. For example, questions ask if the respondent likes his or her job and is proud of his or her unit. Lastly, questions address the individual's feelings of acceptance in the workplace and the community. All of these factors contribute to the overall welfare of the individual and the contentment of the workforce as a whole. The survey will not detect people who will definitely commit violent acts in the workplace, but it may indicate sources of frustration among individuals or the group. If these sources of injustice can be identified and corrected, management

has successfully removed one possible area of stress from the employees lives and lessened the contributing factors that could lead to an act of violence in the workplace.

### **III. Methodology**

#### **Introduction**

The methodology chapter is divided into eight sections. The first describes an overview of the squadron that provided the unit self-assessment results. The second section discusses the demographics of the participants in the survey. The third section explains the experimental instrument utilized in the study while the fourth part describes the data collection process. The fifth section establishes the reliability of the instrument. The sixth section verifies that the assumptions about the data necessary to perform statistical analysis are met. The seventh section details the factor analysis process and results. Finally, the eighth section provides an overview of the systematic approach used to analyze the data and draw conclusions from the results.

#### **Responding Organization**

As discussed in Chapter II, the Air Force is composed of wide range of occupations and work environments. This research focuses only on career fields performing secondary-level aircraft maintenance. This group was chosen for study for two reasons. First, these positions have direct counterparts in the private sector and would therefore introduce the smallest amount of error to the analysis of data. The second reason is that, as explained in the literature review, the demographics of the typical aircraft maintainer share many traits with the typical profile of a perpetrator of workplace violence.

The responding squadron is a secondary-level aircraft maintenance squadron. It is composed of three flights: Accessories, Fabrication, and Maintenance. In 1997, the date of the self-assessment survey, there were 520 officers, enlisted, and civilian employees in the squadron. Each flight focuses on different aspects of aircraft maintenance.

Accessories Flight includes an electrical/environmental section, a fuel cell repair section, a munitions maintenance and handling section, and a hydraulics section. Fabrication Flight performs structural repair, machine shop services, non-destructive inspections, painting, and survival equipment maintenance. Maintenance Flight inspects and repairs the aircraft during the scheduled maintenance periods (Time-phased and Refurbishment inspections) and provides major maintenance expertise (i.e., removal of flight surfaces, landing gear maintenance, control cable tensioning, etc.) to the flightline through the aeronautical repair section.

The responding squadron has a steady workload, although some areas are more heavily tasked than others are. While each workcenter has mobility requirements, the fuel cell maintenance, structural maintenance, and aeronautical repair personnel are deployed most often.

The squadron was selected from all of the secondary-level aircraft maintenance repair areas in the Air Force for two reasons. First, having worked with key personnel in the squadron previously, I had direct access to the somewhat sensitive data that is contained in the self-assessment surveys. Of six squadrons contacted, the responding squadron was only one that was willing to share this data. Secondly, I had first-hand knowledge of incidents of workplace aggression that occurred recently in this squadron. Therefore, by analyzing the very objective data found in the unit self-assessment surveys

as prescribed in the literature, I could provide a validation of the usefulness of this process in a military workcenter.

### **Subjects in the Study**

The respondents in the self-assessment survey were anonymous. However, each person indicated his or her rank or civilian status on the questionnaire. Of the 520 people in the squadron, 237 (45.6 percent) people responded. There were twelve personnel deployed to overseas locations during the survey period. An additional six people were assigned to temporary duty at professional military education schools or specialized training. No one was on leave for the entire month of data collection. The squadron was composed of 29 (5.6 percent) females and 491 (94.4 percent) males. Additionally, there were 6 (1.2 percent) officers, 182 (35 percent) civilians, and 332 (63.8 percent) enlisted (Anderson, 1999). Table 5 summarizes the rank and status of the respondents.

**Table 5: Rank and status of respondents**

Rank/Status	Frequency	Percent
Airman Basic – Senior Airman	103	43.5
Staff Sergeant – Technical Sergeant	56	23.6
Master Sergeant – Chief Master Sergeant	21	8.9
Officer	1	.4
Civilian	56	23.6
Total	237	100

While this sample could rightfully be defined as a convenience sample rather than a diverse cross-section of the Air Force, research indicates that such convenience samples can be generalized beyond the participants of the study (Parsons, 1974: 24, Keppel, 1991:

18). Additionally, Cooper and Emory support the concept that a convenience sample can still be a useful procedure in spite of having a relatively low reliability. Cooper and Emory suggest that convenience samples may provide valuable insight for preliminary research into a topic. This analysis is the first time that Air Force workplaces have been evaluated for warning signs of workplace violence. Therefore, a convenience sample can be appropriate for this study. Moreover, they state that in light of overwhelming response, a convenience sample may be correctly interpreted as representative of the larger population, thus eliminating the need for a more complex sampling procedure (Cooper and Emory, 1995: 228). Analysis of the questionnaires does provide an overwhelming indication that the responding squadron has the proper combination of factors to be at risk of workplace violence.

### **Experimental Instrument**

The survey utilized in this research was a modified Air Force Unit Self-assessment Survey. The original self-assessment survey was designed by the 43d Airlift Wing Social Actions office at Pope AFB, NC. Air Force leadership recognized Pope AFB's Social Actions office for designing a reliable and valid instrument for detecting racial and sexual harassment in the workplace. Their survey became the standard unit self-assessment instrument used throughout the Air Force. Each Social Actions office customized the survey to meet the specific needs of each base (Washington, 1999).

The responding squadron changed the actual title of this document to apply specifically to the base. Additionally, the standard 39-item survey was reduced to 25 questions that the wing's Social Actions office determined were critical to detecting

problems among members (See Appendix A for the entire original questionnaire and Appendix B for the revised version). The focus of the wing's quality office was to evaluate the equal opportunity environment, to determine if people were happy with their workplace, and to find if the extended work hours and shortage of personnel was adversely effecting the workforce.

The revised version of the survey included a number of changes from the original version. Fifteen items were deleted to reduce redundant questions. For example, the original survey asked separate questions pertaining to discrimination against race, color, and national origin while the revised version reduced this question to race only. The revised version expanded a single question ("My flight/division/branch chief has a positive influence....") into 2 different questions about the flight commander and the flight chief. Conversely, the original version asked two different questions about feeling "comfortable participating in unit activities" and "socializing with coworkers" that the revised version combined into a single question. The responding squadron also added a question to address the specific concerns about extended work hours and deployments ("The tempo of my work schedule allows for adequate time with my family). Additionally, the sex and race indicators were deleted from the standard form in an effort to provide greater anonymity for the respondents. Finally, the scale used in questionnaire is as follows:

1 Strongly Disagree	2 Disagree	3 Neutral	4 Agree	5 Strongly Agree
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While it did not impact the results of the survey, this scoring is reversed from the original Pope AFB version of the questionnaire (Anderson, 1999).

Designed to assess the working conditions within a squadron, the questions can be categorized into five major areas. The first encompassed the broad area of work environment. Typical questions addressed the individual's feelings of pride toward the job and squadron, recognition, and time requirements of the job. The second area focused on supervisor's roles and performance. These questions included equal opportunity (race, religion, and gender), communication, training, and evaluations. The third broad topic included questions about the specific working group that the individual belonged to. Questions pertained to attitudes, helpfulness, equity of workload, and favoritism. The fourth and fifth groups were narrowly defined questions to determine attitudes toward the following specific items. The fourth group included questions about the individual's immediate chain of command. The fifth group addressed the individual's sense of belonging to the local community. Questions from the first three categories were intermixed throughout the first 19 questions. However, the fourth and fifth categories followed sequentially for the last six questions.

### **Data Collection**

The responding Squadron Commander assigned the quality office the responsibility of disseminating, collecting, and analyzing the surveys. She defined the collection period as 4 August 1997 to 29 August 1997. A representative of the office attended the roll call for each shop within the squadron to provide an overview of the survey and solicit maximum responses from the squadron. Each shop chief was

responsible for ensuring that each person within his or her shop received a survey and were aware of the collection locations. Seven collection locations were spread throughout the buildings where members of the squadron worked. Each collection location was in a common area, such as a break room or a commonly used hallway. The surveys were placed into a locked wooden box. The Non-commissioned Officer in Charge of the Quality Office and the Squadron Commander each had a key that opened all boxes. The boxes were emptied every other day for the first ten days, and subsequently at the end of each week until one month passed.

### **Reliability of Experimental Instrument**

In order to provide meaningful analysis, the experimental survey must be a reliable instrument. Reliability pertains to the ability of the instrument to provide consistent results. For the purpose of this survey, the reliability of the instrument will indicate the extent to which analysis of the results will truly measure the climate of the workcenter without introducing random error (Cooper and Emory, 1995: 153).

Cronbach's Coefficient Alpha provides a method to determine the reliability of a multi-item scale. Since this analysis utilizes a pre-existing survey, Cronbach's alpha will provide the most accurate measure of reliability (Cooper and Emory, 1995: 155). As a general rule of thumb, Cronbach's alpha should exceed 0.70 for a scale to demonstrate internal consistency (Nunnally, 1978, 245).

The data was analyzed utilizing SPSS for Windows (Release 7.0) statistical analysis software. A reliability analysis indicated Cronbach's alpha is 0.9371 for the 25-item survey. Therefore, according to Nunnally's rule-of-thumb, the questionnaire is

highly reliable. Additionally, reliability analysis was performed on the subsets of questions. The results of these analyses are included in Table 6. These reliabilities are quite acceptable for each subset of questions.

Table 6: Reliability of each area and overall survey reliability

Category	Number of Items	Cronbach's Alpha
Work Environment	7	.8450
Supervisory Climate	7	.8678
Working Group	6	.8394
Chain of Command Satisfaction	4	.8550
Local Community Satisfaction	2	.8515
Entire Survey	25	.9371

### **Verification of Assumptions**

Upon receipt of the questionnaires, the data was input into Microsoft Excel. A cursory review of the results was performed to obtain the mean, variance, and median of each question. Then this process was repeated with the data subdivided by rank.

Histograms were produced to provide visual analysis of the means of each question. Following this preliminary overview, the actual statistical analysis was performed.

To perform a meaningful analysis of data, three critical assumptions must be met. These three assumptions are: independence of observations, homogeneity of variance, and normally distributed experimental populations (Keppel, 1991: 102).

The requirement for independence is satisfied if it is assumed that each person completed his or her own questionnaire without collaboration. Additionally, each person must have believed that his or her responses would remain anonymous and not adversely impact their work environment. There is sufficient evidence to conclude that these

assumptions were met through the careful collection of data and the briefings by the quality office to explain the uses of the data.

The assumption of homogeneity of variance was evaluated through reliability analysis on SPSS. Once the values of the maximum and minimum variance were found, the Hartley test will determine if equal variance is present. The ratio of the largest variance to the smallest variance is taken. An item variance near one indicates that the variance is homogeneous throughout the questionnaire (Keppel, 1991: 102). Performing a reliability analysis on SPSS, the output indicated that the item variances had a mean value of 1.0948. The maximum variance was 0.8615 while the minimum was 1.5113. Therefore, by performing the Hartley test, a value of 1.754 was obtained. With an ideal value of 1, the test value has significance at greater than a 99% confidence level.

A Kolmogorov-Smirnov test was used to test normality. By selecting the "Explore" item under the "Statistics" window on SPSS, the normality of the data is tested. All values were determined to be normal at greater than a 99% confidence interval. The results from this test are displayed in Appendix C.

### **Factor Analysis**

Once the data was determined to meet the above criteria, the actual analysis began. The SPSS software was again utilized to perform a factor analysis. Factor analysis is actually a broad category of mathematical techniques designed to simplify a large number of variables into a more manageable number of categories of variables. The analysis utilizes a matrix of intercorrelations among the variables to derive the categories. For each category, each variable receives a loading that is based upon the

degree to which it correlates within the group. The variable is “assigned to” the category that has the highest loading. For this experiment, the loadings were determined by rotation with a varimax algorithm. Rotation is a method to obtain a “best fit” set of axes for the data (Cooper and Emory, 1995: 538 – 543). The varimax method was developed by H.F. Kaiser in 1958 to “maximize the sum of variances of squared loadings in the columns of the factor matrix” (Nunnally, 1978: 384).

Factor analysis does have four concerns for investigators. First, for small sample sizes, repeating the factor analysis could result in different patterns of factor loadings. The 237 responses to the survey are considered a small sample. The second concern is that subsequent analysis could produce a different number of factors. Third, the analysis is somewhat subjective and could be interpreted differently by different researchers. Last, the actual data labels for each variable (in this case, the questions) may not have an obvious relationship to the category that it is assigned to (Cooper and Emory, 1995: 542 – 3). However, utilizing the varimax technique has been determined as the best to produce a replicable final result. Additionally, the varimax program “worked so well for exploratory factor analysis that it has become hard to improve upon” (Nunnally, 1978: 385).

Using SPSS, a factor analysis was performed. All questions were input as variables, but rank was not included. The output appears in Appendix D. The boldface items represent the factors that each question was assigned to. The closer the loading is to 1, the stronger the association with the factor. Some questions clearly are associated with only one factor (e.g., question 8 with a 0.83471 loading on factor 2 and no other

loadings above .17554) while others have moderately strong associations with more than one factor (e.g., question 19 with only 0.075 difference among three factors).

A further study of the factor analysis illustrates the strength of the data. Factors 4 and 5 contain questions that are strongly associated only with their own factor. The questions in Factor 4 are very similar questions. Each queries the respondent whether four different members of their chain of command have a positive influence on members of the squadron. Similarly, the questions in Factor 5 both pertain to local community items. These 6 questions are also very different than the other 19 questions in the survey. The factor analysis clearly found similarities among the answers and correctly grouped these questions together.

The other three factors can roughly be divided into measuring different aspects of the workplace. Factor 1 focuses on the general work climate and included questions such as "I like my job" and "I feel motivated to give my best efforts to the mission." Factor 2 is more concerned with the supervisory climate of the squadron. This factor included all of the equal opportunity questions as well as training, supervisory attitudes and supervisory feedback items. Factor 3 contains the items that were highlighted in Chapter II as being indicators of potential workplace aggression. These items included "coworkers do their fair share of the work," "the human relations climate in my work area is good," and "people in my work area do not practice favoritism." Additionally, four items that appeared on Factor 1 also had moderately high loading on Factor 3. These items related to recognition for good performance, work atmosphere, and communication with supervision.

## **Data Analysis**

Once the instrument was validated and the data determined to meet the basic statistical assumptions, the actual analysis could begin. The first step was to obtain the mean, median, and standard deviation of the data to note any obvious trends or anomalies in the data.

The in-depth analysis began by separating the data into two groups. The first group included ten items determined to be indicators of a potential perpetrator of workplace violence. These items were selected by researching trends in the literature and subsequently analyzing the questionnaire for similarities. All of the ten items identified as indicators relate directly to fairness, equity, and work environment.

The remaining fifteen items comprised the second group of non-indicators. Once these groups were established, each respondent's answers to the questionnaire were simplified into two mean values. The first was for the indicators of workplace violence and the second for non-indicators. These values were then sorted by rank. Finally, a Student's T-test was used to determine if there was a significant difference among the means.

Two different T-tests were performed. The first compared the means of the indicators versus non-indicators for each rank. This test determined whether there was a significant difference between each rank group's responses to the violence indicator questions and the other questions. The second test compared different rank group's responses to each group of questions. For example, the mean value of the Airman group's answers to the violence indicator questions was compared to the mean value of the civilian group's answers to the same questions. This test established whether there

was a significant difference between the mean values of different rank's responses to each group of questions. By analyzing these tests together, any patterns that relate rank to higher indications of a propensity to commit workplace violence can be found.

The final analysis of the data involved reviewing each questionnaire to find patterns within the indicators of potential workplace violence. This approach was a manual process to detect extremely strong indications of dissatisfaction with the squadron in the indicator questions.

### **Summary**

This study analyzed a unit self-assessment survey to evaluate its usefulness as an indicator of potential violence in the workplace. The respondents replied at a 45.6% rate. This questionnaire was evaluated to ensure it met three assumptions for statistical analysis and was subsequently analyzed through factor analysis to find meaningful trends.

## **IV. Results and Analysis**

### **Introduction**

This chapter presents the findings from application of the methods described in Chapter III to the survey data. The focus of the analysis is to answer the research questions stated in Chapter I of this research study. To reiterate, those questions are:

1. What is workplace violence and is the Air Force affected by it?
2. Is there information that the Air Force already gathers that could be analyzed to determine what areas might be at risk for incidents of workplace aggression?

Question 1 was answered through the literature review described in Chapter II. This chapter contains the answer to Question 2 as discovered through analysis of the data and comparison with predicted results in the literature.

### **Initial Analysis**

As described in Chapter III, the data was reviewed to note significant responses to the questions. The mean, median, and standard deviation of each question were calculated for all of the results and by rank. The results appear in Table 7 below.

Table 7. Descriptive statistics of survey data

Question	Mean	Median	Standard Deviation
1	3.80	4.00	0.98
2	3.16	3.00	1.01
3	3.30	3.00	1.03
4	3.20	3.00	1.18
5	3.61	4.00	0.97
6	3.75	4.00	1.08
7	4.00	4.00	0.94
8	3.91	4.00	1.01
9	3.85	4.00	1.03
10	3.79	4.00	0.93
11	3.64	4.00	1.00
12	3.46	4.00	1.14
13	3.65	4.00	1.08
14	2.93	3.00	1.08
15	3.37	3.00	1.03
16	3.51	4.00	1.07
17	3.34	4.00	1.23
18	3.61	4.00	0.95
19	3.07	3.00	1.16
20	3.68	4.00	0.98
21	3.57	4.00	0.96
22	3.65	4.00	0.90
23	3.55	4.00	0.90
24	3.82	4.00	0.98
25	3.89	4.00	0.93

This preliminary analysis provided some interesting insight into the data. The two extreme values were a mean of 4.00 for question 7 (My chain of command provides equal opportunity regardless of religious preference) and 2.93 for question 14 (My chain of command awards and recognizes the most deserving members in the unit). Overall, the responses appeared to be mostly neutral to slightly agreeable. However, there did appear to be a trend that the lowest means involved questions about favoritism, recognition, work environment, and supervisor's attitudes.

## Detailed Analysis

As identified in Chapter II, most early warning signs of potential workplace violence involve perceived injustice at work. Additionally, as stated in Chapter III, the questions were grouped into five factors differentiated by the specific aspect of the work environment measured. Factor 1 covered a broad measurement of satisfaction with the general work environment. Factor 2 focused on the supervisory climate of the squadron. Factor 3 contains items directly relating to fair treatment within the workplace. Factor 4 measured the chain of command's specific influence on members of the squadron. Finally, Factor 5 pertains to satisfaction with the local community. All of the items that fall within Factor 3 and many of the items in Factor 1 relate directly to fairness. A summary of all of the questions from Factor 3 along with the research-indicated pertinent questions from Factor 1 are displayed in Table 8. This table illustrates that each question had a range of responses from "1" to "5." Additionally, the means show that most of these items scored between "Neutral" and "Agree."

Table 8. Descriptive statistics of possible indicators of workplace violence

Question	Minimum	Maximum	Mean	Standard Deviation
3	1	5	3.304	1.030
4	1	5	3.198	1.182
5	1	5	3.608	0.967
10	1	5	3.794	0.929
12	1	5	3.464	1.141
14	1	5	2.931	1.077
15	1	5	3.369	1.034
16	1	5	3.509	1.065
18	1	5	3.607	0.949
19	1	5	3.073	1.164

While Table 8 illustrates the aggregate results, additional analysis of the data yielded more significant findings. The data was sorted by rank and divided into indicators of violence (those questions in Table 8) and non-indicators of violence (the remaining 15 questions). By performing a student's T-test to compare the mean value of the indicators and the mean value of the non-indicators, clear trends emerged. Within the Airman Basic to Senior Airman range, the T-test strongly indicated that the means of the two ranges of questions differed. In fact, the mean of the questions that were indicators of workplace violence had a much lower value than the mean of the non-indicators. For both the Staff Sergeant to Technical Sergeant ranks and the civilian workforce from the responding squadron, the T-test also indicated very strong differences between the mean value of the groups of questions. However, for both the Master Sergeant to Chief Master Sergeant ranks and all officer ranks, the T-test returned an indistinguishable difference between the means of the indicators and non-indicators of violence. In other words, the data indicates that the upper management of the responding squadron did not exhibit warning signs of potential workplace violence through the climate assessment survey. Conversely, all of the subordinate ranks recorded significantly lower values on the violence indicators of the survey than on the non-indicators. These results are summarized in Table 9. A probability lower than the alpha level denotes a significant finding.

Table 9. Student's T-test results by rank, violence indicators versus non-indicators

Rank	T-score	Probability
Airman	5000000	2.67E-12
Staff -Technical Sergeant	4.841	2.22E-06
Senior Enlisted/Officer	0.691	0.489
Civilian	4.232	3.30E-05
Alpha	2.596735	0.01

Further analysis of the data by rank provided even greater insight into the differences highlighted by Table 9. A pairwise Student's T-test was performed to compare the mean values of different ranks within the same group of questions. For example, the mean value of the Airman rank's response to the indicators of violence was compared with the mean value of the civilian rank's response to the same group of questions. This evaluation is summarized in Table 10. The tests showed that the responses from the Airman group, Staff and Technical Sergeant group, and civilian group were indistinguishable at alpha = 0.01. Furthermore, the tests revealed that these same ranks differed significantly from the Master Sergeant to Chief Master Sergeant and the officer rank's responses to either category of questions.

Table 10. Paired T-test of workplace violence indicators versus non-indicators

	Indicators		Non-indicators	
	T-score	Probability	T-score	Probability
Airman vs Senior Enlisted/Officer	4.917	1.93E-06	3.252	1.31E-3
Staff-Technical Sergeant vs Senior Enlisted/Officer	4.712	4.17E-06	3.349	9.43E-4
Civilian vs Senior Enlisted/Officer	4.657	5.09E-6	3.951	1.03E-4
Airman vs Staff-Technical Sergeant	1.081	0.281	0.682	0.496
Airman vs Civilian	1.098	0.274	1.506	0.133
Staff-Technical Sergeant vs Civilian	0.690	0.491	1.426	0.155
Alpha	2.597	0.010	2.597	0.010

With the above disparities highlighted, further analysis of the individual questionnaires provided additional insight into potential workplace aggression. Of particular concern were four of the surveys that had all "1" and "2" responses to all of the workplace violence indicators and one additional survey that had all "1" responses to these questions. Nine additional surveys had all "1" or "2" responses to at least seven of the ten items. There is reason to believe that these respondents answered honestly and did not randomly place low marks throughout the survey. Each of these fourteen questionnaires had at least one "4" or higher response and a number of "3" responses. Therefore, in addition to the overall neutral results that the entire survey produced about the work climate, fourteen respondents were identified that could be a potential perpetrator of workplace violence.

While this questionnaire does not provide an absolute indicator of workplace violence, the results do clearly show that management should address some issues that are important across the workforce. The climate assessment survey, that is already performed biannually, can provide vital information to prevent occurrences of workplace aggression.

## **Summary**

Factor analysis and the literature review isolated some key issues that managers should be aware of to prevent incidents of workplace violence. Analysis of the data provided by the responding squadron indicates that the subordinate ranks exhibit significantly higher warning signs of potential workplace violence than do the squadron's

leadership ranks. Furthermore, these subordinate ranks demonstrate far lower satisfaction with the questions about favoritism, recognition, work environment, and supervisor's attitudes than with other areas of the survey. These results provide convincing evidence that the Unit Climate Assessment Survey currently in use by the Air Force can be used to detect warning signs of potential workplace violence.

## V. Conclusion

### Overview

Repeated occurrences of workplace violence throughout society suggest, the Air Force must be prepared to evaluate its own workplaces and determine if a threat exists. This research explored violence in the workplace the established the possibility that workplace violence can affect the Air Force. Additionally, this thesis examined the data that the Air Force currently collects to determine if existing information could be useful in detecting early warning signs of potential workplace violence.

A review of the current literature revealed that workplace violence is a rapidly growing problem that affects every industry. A number of examples of violence that occurred within Air Force workplaces highlighted the threat that exists for today's leadership. With over 1,680 incidents of workplace violence reported to the AFOSI in a 5-year period, Air Force leadership needs a method to predict dangerous environments and a plan to reduce the dangers of incidents of violence. As a brief reference for leaders, Table 4 on page 19 provided an overview of the triggers that can cause workplace violence and the chain of events that could precipitate an event of violence.

Current research indicated that workplace climate surveys are an effective means of detecting warning signs of a potential perpetrator of workplace violence. By analyzing Air Force Climate Assessment Surveys, this research determined that the Air Force could use their current survey to detect warning signs of an unstable work environment. By focusing on ten items of the standard Air Force survey, trends in favoritism, inequity, and poor supervision may be detected early enough to reduce the potential of violence.

## **Limitations and Implications**

This research utilized the Air Force Climate Assessment Survey to detect warning signs of potential workplace violence. While the results provide reason to believe that the survey can be an effective instrument to detect early warning signs of violence, the survey was never intended to serve this function. Additionally, the anonymity of the respondents prohibits any correlation between the actual perpetrators of violence within the responding squadron and the fourteen surveys that exhibited strong warning signs. In spite of these drawbacks, the Climate Assessment Survey demonstrates an effective way to determine the general welfare of the work environment without collecting additional data.

## **Areas for Future Research**

A number of avenues exist to expand this research and establish the Air Force Climate Assessment Survey as a reliable predictor of unfavorable work environments. The broadest area for future research is to obtain climate assessment data from a large number of organizations and perform the same tests as in this thesis. By expanding the number and the background of the respondents, a more accurate depiction of the work environment within the Air Force can be found.

Perhaps the most useful follow-on research would be to obtain actual workplace violence reports from the AFOSI in conjunction with those squadron's Climate Assessment Surveys. By analyzing additional known cases of violence, the reliability of the survey could be better established. Additionally, the incident reports would contain

information about the perpetrator's motivation, history, and suspected triggers that could further lend credibility to the use of the survey to detect these problems prior to an incident.

## Appendix A. Equal Opportunity and Treatment Unit Climate Assessment Survey

### EQUAL OPPORTUNITY AND TREATMENT UNIT CLIMATE ASSESSMENT SURVEY

Indicate the extent to which you agree or disagree with the following statements. Please write your response on the line to the left of the statement. SCN 95-94

1	2	3	4	5
Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
1. I like my job.				
2. The work atmosphere makes it easy to do my job.				
3. Coworkers do their fair share of work.				
4. I am recognized for doing a good job.				
5. I am not under unreasonable stress on my job.				
6. My chain of command awards and recognizes the most deserving members in my unit.				
7. I feel motivated to give my best efforts to the mission.				
8. I am proud of my unit and what I do.				
9. Discrimination based on race does not occur in my work area.				
10. Discrimination based on color does not occur in my work area.				
11. Discrimination based on national origin does not occur in my work area.				
12. Discrimination based on religion does not occur in my work area.				
13. Discrimination based on sex does not occur in my work area.				
14. My chain of command provides equal opportunity regardless of gender.				
15. Sexual harassment does not occur in my work area.				
16. People in my work area do not practice favoritism.				
17. I feel free to use outside agencies to address concerns of discrimination.				
18. I believe I can use my chain of command to complain about discrimination and sexual harassment without fear of reprisal.				
19. There's open communication between me and my supervisor(s).				
20. Members in my work area help each other when we have problems.				
21. I receive adequate training to perform my assigned duties.				
22. My supervisor tries to keep the atmosphere positive.				
23. My supervisor provides useful and timely verbal or written performance feedback.				
24. My latest performance report of evaluation accurately reflects my duty performance.				
25. My commander/director has a positive influence on unit members.				
26. My first sergeant has a positive influence on unit members.				
27. My flight/division/branch chief has a positive influence on unit members.				
28. I believe my chain of command administers discipline fairly within the unit.				

1	2	3	4	5
Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree

29. Racial slurs or comments are not used in my work area.  
 30. Religious slurs or comments are not used in my work area.  
 31. Sexual comments or jokes are not used in my work area.  
 32. The unit commander's policy on sexual harassment is clear.  
 33. The unit commander's policy on discrimination is clear.  
 34. The human relations climate in my work area is good.  
 35. I feel comfortable socializing with coworkers.  
 36. I feel comfortable participating in unit activities.  
 37. I feel comfortable attending unit functions.  
 38. I feel comfortable participating in community activities.  
 39. I feel accepted in the local community.

To assist with evaluation trends, please identify your sex, race, and rank. Circle your response

40. SEX		1 Male	2 Female	
41. RACE	Black	1 White	2 Other	
42. RANK	AB- SrA	SSgt- TSgt	MSgt- CMSgt	Lt-Capt Maj-Col CIV ( fill in grade level)

#### COMMENTS SECTION

Use the following section for comments to help us accurately assess the human relations climate in your work area. If you are commenting on a specific survey statement, please identify the number of the statement with your comment. If more space is needed continue your comments on the other side of this page.

## **Appendix B. [Responding Squadron] Climate Assessment Survey**

### **[Responding Squadron] Climate Assessment Survey**

**Instructions:** Read each statement and put the response that correctly reflects your personal opinion. An optional comment area is provided at the bottom for any further inputs.

1 Strongly Disagree	2 Disagree	3 Neutral	4 Agree	5 Strongly Agree
---------------------------	---------------	--------------	------------	------------------------

1. I like my job
2. The work atmosphere makes it easy to do my job.
3. Coworkers do their fair share of work.
4. I am recognized for doing a good job.
5. I am proud of my unit and what I do.
6. My chain of command provides equal opportunity regardless of gender.
7. My chain of command provides equal opportunity regardless of religious preference.
8. My chain of command provides equal opportunity regardless of race.
9. There's open communication between me and my supervisor (s).
10. Members in my work area help each other when we have problems.
11. I receive adequate training to perform my assigned duties.
12. My supervisor(s) projects a positive attitude towards their people and the job.
13. My supervisor provides useful and timely verbal or written performance feedback.
14. My chain of command awards and recognizes the most deserving members in the unit.
15. The human relations climate in my work area is good.
16. I feel comfortable socializing with coworkers and participating in unit activities.
17. The tempo of my work schedule allows for adequate time with my family.
18. I feel motivated to give my best efforts to the mission.
19. People in my work area do not practice favoritism.
20. My commander has a positive influence on unit members.
21. My first sergeant has a positive influence on unit members.
22. My flight commander has a positive influence on unit members.
23. My flight chief has a positive influence on unit members.
24. I feel comfortable in participating in community activities.
25. I feel accepted in the local community.
26. Please circle the block that correctly identifies your rank.

1	2	3	4	5
AB - SRA	SGT - TSGT	MSGT - CMSGT	OFFICER	CIVILIAN

**COMMENTS:** \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

## Appendix C. Tests of Normality

Tests of Normality

	Kolmogorov-Smirnov <sup>a</sup>		
	Statistic	df	Sig.
Q1	.272	232	.000
Q10	.281	232	.000
Q11	.289	232	.000
Q12	.209	232	.000
Q13	.266	232	.000
Q14	.211	232	.000
Q15	.213	232	.000
Q16	.234	232	.000
Q17	.249	232	.000
Q18	.245	232	.000
Q19	.186	232	.000
Q2	.196	232	.000
Q20	.236	232	.000
Q21	.191	232	.000
Q22	.204	232	.000
Q23	.205	232	.000
Q24	.232	232	.000
Q25	.235	232	.000
Q3	.232	232	.000
Q4	.205	232	.000
Q5	.207	232	.000
Q6	.240	232	.000
Q7	.212	232	.000
Q8	.239	232	.000
Q9	.266	232	.000

a. Lilliefors Significance Correction

#### Appendix D. Factor Analysis Results

	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5
Q1	<b>.67517</b>	.07600	.07271	.17512	.15211
Q2	<b>.58042</b>	.17615	.44372	.18412	.04430
Q3	.08112	.12763	<b>.67384</b>	.11595	.06357
Q4	<b>.61643</b>	.20950	.32268	.08736	-.05567
Q5	<b>.75327</b>	.20938	.15165	.22766	.16016
Q6	.16571	<b>.77509</b>	.17727	.24236	.12351
Q7	.08340	<b>.79309</b>	.07918	.20907	.31993
Q8	.10450	<b>.83471</b>	.06188	.17143	.17554
Q9	.28135	<b>.55991</b>	.42659	.03700	.00953
Q10	.25390	.06807	<b>.65629</b>	.14559	.25328
Q11	.32886	<b>.42126</b>	.19853	.04030	.25484
Q12	.31236	.48923	<b>.58504</b>	.11573	-.07677
Q13	.19363	<b>.48716</b>	.40765	.20546	.02560
Q14	<b>.51679</b>	.28965	.25336	.30083	.01975
Q15	.32487	.15833	<b>.68382</b>	.17832	.17486
Q16	.37868	.19582	<b>.49488</b>	.17253	.42006
Q17	<b>.46114</b>	.01843	.23384	.13894	.25023
Q18	<b>.75496</b>	.15862	.18279	.20768	.17006
Q19	.38482	.38661	<b>.45857</b>	.09695	.17805
Q20	.29875	.15962	-.02428	<b>.71923</b>	.23694
Q21	.14713	.10004	.23681	<b>.79384</b>	.14584
Q22	.24507	.24513	.11348	<b>.76854</b>	.08501
Q23	.17422	.18434	.24760	<b>.76559</b>	.01338
Q24	.21856	.26320	.14831	.11107	<b>.80659</b>
Q25	.12596	.20153	.14525	.19607	<b>.83056</b>

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## Vita

First Lieutenant Shawn R. Jones was born on 29 June 1971 in Cincinnati, Ohio. He graduated from The Miami Valley School in Dayton, Ohio in June 1989. He began college at the United States Naval Academy in Annapolis, Maryland and completed his studies at Miami University in Oxford, Ohio where he graduated with a Bachelor of Science degree in Aeronautics in December 1993. He was commissioned through Officer Training School at Maxwell AFB, Alabama in September 1995.

His first assignment was at Travis AFB, California. He served as Flight Commander for four different flights in two squadrons while at Travis AFB. In May 1998, he entered the Graduate Logistics Management program, School of Logistics and Acquisition Management, Air Force Institute of Technology. Upon graduation, he will be assigned to McGuire AFB, New Jersey at Headquarters, 21<sup>st</sup> Air Force.

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The repeated occurrences of workplace violence throughout society today require the Air Force to evaluate its own workplaces and determine if a threat exists. This research explored violence in the workplace and established the possibility that workplace violence can affect the Air Force. Additionally, Air Force Climate Assessment Surveys were evaluated to find information that could be useful in detecting early warning signs of potential workplace violence.				
A number of examples of violence that occurred within Air Force workplaces highlighted the threat for Air Force leadership. With over 1,680 incidents of workplace violence reported to the AFOSI in a 5-year period, Air Force leadership needs a method to predict dangerous environments and a plan to reduce the dangers of incidents of violence.				
Current research indicated that workplace climate surveys are an effective means of detecting warning signs of a potential perpetrator of workplace violence. The analysis of Air Force Climate Assessment Surveys determined that the Air Force could use their current survey to detect warning signs of an unstable work environment. By focusing on ten items of the standard Air Force survey, trends in favoritism, inequity, and poor supervision may be detected early enough to reduce the potential of violence.				
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